CLAIMS

1. An ink jet recording element comprising a support and at least one ink-receiving layer, wherein said ink-receiving layer comprises at least one hydrosoluble binder and at least one aluminosilicate polymer obtainable by a preparation method that comprises the following steps:

a) treating a mixed aluminum and silicon alkoxide only comprising hydrolyzable functions, or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum compounds and silicon compounds only comprising hydrolyzable functions, with an aqueous alkali, in the presence of silanol groups, the aluminum concentration being maintained at less than 0.3 mol/l, the Al/Si molar ratio being maintained between 1 and 3.6 and the alkali/Al molar ratio being maintained between 2.3 and 3;
b) stirring the mixture resulting from step a) at ambient temperature in the presence of silanol groups long enough to form the aluminosilicate polymer; and
c) eliminating the byproducts formed during steps a) and b) from the reaction medium.

2. The recording element according to Claim 1, wherein the alkali of step a) to prepare the aluminosilicate polymer is selected from the group consisting of sodium, potassium, and lithium hydroxide, diethylamine, and triethylamine.

3. The recording element according to Claim 1, wherein the silanol groups used to prepare the aluminosilicate polymer are supplied in silica or glass bead form.

4. The recording element according to Claim 1, wherein the aluminum concentration used to prepare the aluminosilicate polymer is maintained between 1.5×10^{-2} and 0.3 mol/l.

5. The recording element according to Claim 1, wherein the aluminum concentration used to prepare the aluminosilicate polymer is maintained between 4.4×10^{-2} and 0.3 mol/l.

6. The recording element according to Claim 1, wherein said alkali/Al molar ratio to prepare the aluminosilicate polymer is about 2.3.

7. The recording element according to Claim 1, wherein said alkali/Al molar ratio to prepare the aluminosilicate polymer is about 3.

8. The recording element according to Claim 1, wherein the method for preparing the aluminosilicate polymer comprises, after step b) and before step c), a step d), by which alkali is added in order to reach an alkali/Al molar ratio of 3 if this ratio has not already been reached in step a).

9. The recording element according to Claim 1, wherein the mixed aluminum and silicon precursor resulting from hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable functions is a product resulting from the mixture in an aqueous medium (i) of a compound selected from the group consisting of aluminum salts, aluminum alkoxides and aluminum halogenoalkoxides and (ii) at least one compound selected from the group consisting of silicon alkoxides and chloroalkoxides only having hydrolyzable functions.

10. The recording element according to Claim 9, wherein said mixed aluminum and silicon precursor is the product resulting from the mixture (i) of an aluminum halide and (ii) a silicon alkoxide only having hydrolyzable functions.

11. The recording element according to Claim 10, wherein said silicon alkoxide only having hydrolyzable functions is tetramethyl orthosilicate or tetraethyl orthosilicate.

12. The recording element according to Claim 1, wherein the method for preparing the aluminosilicate polymer comprises, after step c), a step e), by which at least one chelating agent of aluminum is added to the aluminosilicate polymer resulting from step c), wherein the amount of the chelating agent in the ink-receiving layer corresponds to a molar ratio between the chelating functions of the chelating agent and aluminum of the aluminosilicate polymer, and wherein this molar ratio is less than 1.

13. The recording element according to Claim 12, wherein step e) is applied directly on the aluminosilicate polymer resulting from step c) to prepare a aluminosilicate polymer resulting from step e) or when a coating composition for the preparation of the ink-receiving layer is prepared by using a aluminosilicate polymer resulting from step c).

14. The recording element according to Claim 12, wherein said chelating agent of aluminum is selected from the group consisting of carboxylic acids, phosphonic acids, sulfonic acids, difunctional acids, their ester and anhydride components and amino acids.

15. The recording element according to Claim 14, wherein said chelating agent of aluminum is selected from the group consisting of HCOOH, R_1COOH wherein R_1 is selected from the group consisting of $CH_3(CH_2)_n$, n being between to 0 and 12, CF_3, C_6H_5, $(C_6H_5)_2$, substituted aromatic rings, C_4H_4S; $R_2PO(OH)_2$ wherein R_2 is selected from the group consisting of CH_3, C_6H_5; R_3SO_3H wherein R_3 is $CH_3(CH_2)_n$, n being between to 0 and 5; $HOOC(CH_2)_nCOOH$, n = 0-8; aromatic difunctional acids;

$HOOC(CH_2)_nPO(OH)_2$, n = 2, 4; hydroxy aliphatic acids; $HOOC(CH_2OH)_nCOOH$, n = 1-2; $CH_3CH(NH_2)COOH$.

16. The recording element according to Claim 12, wherein step e) comprises a first adding of acetic acid and a following adding of another different chelating agent of aluminum.

17. The recording element according to Claim 1, wherein said ink-receiving layer comprises between 5 and 95 percent by weight of aluminosilicate polymer compared with the total weight of the dry ink-receiving layer.

18. The recording element according to Claim 1, wherein the hydrophilic binder is gelatin or polyvinyl alcohol.

19. A coating composition for the preparation of ink-receiving layers for the ink jet recording element according to Claim 1.